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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,832	08/20/2003	Eduardo Figueiredo	GEMS8081.159	1831

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EXAMINER	
MEHTA, PARIKHA SOLANKI	
ART UNIT	**PAPER NUMBER**
3737	
MAIL DATE	**DELIVERY MODE**
06/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

HH

Office Action Summary	Application No.	Applicant(s)	
	10/604,832	FIGUEIREDO ET AL.	
	Examiner	Art Unit	
	Parikha S. Mehta	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,19,20 and 23-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,19,20 and 23-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8/20/03* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 May 2007 has been entered.

Response to Amendment

2. The amendment filed on 14 May 2007 under 37 CFR 1.131 is sufficient to overcome the Eilenberg (US Patent No. 5,414,358) reference as previously applied to claims 1-26. However, in view of new prior art, Examiner presents herein modified rejections of all pending claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-14, 19, 20 and 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eilenberg (US Patent Number 5,414,358) in view of Rhinehart (US Patent No. 5,452,232), hereinafter Eilenberg ('358) and Rhinehart ('232), respectively.

Regarding claims 1-10, 20 and 23-35, Eilenberg ('358) teaches a method and probe for endo-cavity MR imaging, wherein the MR coil of the probe is enclosed in a bag into which fat saturation enhancing material is introduced, wherein the fat saturation enhancing material also enhances homogeneity (col. 12 lines 29-34, Figs. 14 & 15). Eilenberg additionally provides a hollow shaft extending from the bag and protruding out from the subject (Fig. 14). Eilenberg ('358) teaches that the

homogeneity enhancing fluid may be delivered by "a syringe or other source via tube 92" (col. 12 lines 41-43), wherein the reference syringe constitutes a pump and fluid reservoir as claimed in the instant application. By common definition of the syringe, it inherently forces the homogeneity enhancing material through a hollow shaft to the supply tube, from which it is delivered to the housing. Eilenberg ('358) also teaches that the fat saturation enhancing material may be a perfluorocarbon, which is well known in the art to promote magnetic field homogeneity in MR spectroscopy applications (col. 7 lines 22-25).

Eilenberg ('358) specifies that fluorocarbon compounds have a magnetic susceptibility similar to that of water-containing human tissue, and also discloses that such compounds are in a gel or liquid state at room temperature (col. 7 line 25-27 & 46-68).

Eilenberg ('358) further teaches that the bag is selectively fillable so as to facilitate maximum contact between the bag containing the homogeneity-enhancing material and the body cavity being imaged, which allows for receiving MR data from a wider area of the subject as described in the specification of the instant application (col. 11 lines 6-8).

Eilenberg ('358) states that the probe may be in a deflated state prior to insertion into the rectum, and that the probe can be inflated via a syringe following insertion (col. 12 lines 39-43).

Eilenberg ('358) does not teach or suggest a retainer and steps for its use, wherein the retainer is connected to the hollow shaft of the probe and positioned in proximity to the housing that secures the RF coil within the subject to be imaged. In the same field of endeavor, Rhinehart ('232) teaches an endocavity MR probe with an inflatable anti-migration cuff (retainer) connected to a hollow shaft and positioned in proximity to the housing that secures the RF coil within the subject (Fig. 7 element 62). The cuff of Rhinehart ('232) is capable of being inflated with the homogeneity enhancing material of Eilenberg ('358). Rhinehart ('232) expressly teaches that the cuff is useful to prevent migration of the probe within the patient (col. 3 lines 30-44). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the probe and method of Eilenberg ('358) to further include the retainer and steps for use taught by Rhinehart ('232) in order to better secure the position of the probe within the patient, in view of the teachings of Rhinehart ('232).

Regarding claims 11-14, 19, 28, 29 and 31, Eilenberg ('358) and Rhinehart ('232) teach all features of the present invention as previously discussed for claim 1. Eilenberg ('358) further describes the MR probe in the context of common MRI machines (col. 9 line 22). It is well known that state of the art MRI systems comprise a plurality of gradient coils positioned about a bore of a magnet, an RF

transceiver system, and an RF switch controlled by a pulse module. Eilenberg ('358) thereby teaches that the homogeneity-enhancing probe ('358) may comprise an apparatus including such a probe, in addition to including a gradient coil, RF transceiver system, and an RF switch. Eilenberg ('358) additionally teaches a syringe to control delivery of the homogeneity enhancing material as previously discussed (Fig. 14), which constitutes a pump and an inflation control means as claimed in the instant application.

Regarding claims 30 and 32, neither Eilenberg ('358) nor Rhinehart ('232) does not expressly teach an embodiment including an endocavity coil and an electronic pump to control inflation of the housing. In a different embodiment, Eilenberg ('358) provides a pump 60 for delivering fat saturation enhancing material to the bag (col. 11 lines 9-13). Eilenberg ('358) states that the "bag is filled by turning on the pump 60 to feed the fat saturation enhancing material through the inlet tube 50 from the reservoir 75" (col. 11 lines 14-16). By stating that the pump must be turned on, Eilenberg ('358) thereby implies that the pump is electronically controlled. It would have been obvious to one of ordinary skill in the art at the time of invention to use the electronic pump of Eilenberg ('358) with the endocavity coil embodiment also taught by Eilenberg ('358), previously modified by Rhinehart ('232) in order to more precisely control the delivery of the homogeneity enhancing material.

Eilenberg fails to teach a retainer filled with homogeneity enhancing material and a handle connected to the hollow shaft to position the RF coil within the subject as claimed in the instant application. However, Rhinehart ('232) sufficiently teaches the retainer as previously discussed for claim 1. Rhinehart ('232) further teaches a handle connected to the hollow shaft as claimed in the instant application (Fig. 1 element 18). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the MR imaging apparatus of Eilenberg ('358) to further include the retainer and handle of Rhinehart ('232) in order to improve the ease and accuracy of probe placement within the patient, in view of the teachings of Rhinehart ('232) (col. 3 lines 30-44).

Regarding claims 26 and 27, Eilenberg ('358) teaches the probe as being an assembly of separate components, including the coil, housing and supply of perfluorocarbon, all of which collectively constitute a kit (Fig. 1). However, Eilenberg ('358) fails to include a retainer as claimed in the instant application. As previously discussed for claim 1, Rhinehart ('232) teaches such an external inflatable retainer (cuff). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the kit of Eilenberg ('358) to further include the retainer of Rhinehart ('232), in view of the previously discussed teachings of Rhinehart ('232).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Parikha S. Mehta
Examiner – Art Unit 3737

ELENI MANTIS MERCADER
SUPERVISORY PATENT EXAMINER